

FY06-LVII(55)- 148

“Lignite Vision 21 Project Coal-to-Liquids Plant McLean County, North Dakota”

Submitted by: American Lignite Energy (Great River Energy; The Falkirk Mining Company; Headwaters Energy Services, Corporation; and, The North American Coal Corporation)

Principal Investigator: James Lepinski

PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share</u>
American Lignite Energy	
Initial Funding	\$ 1,700,000
Final Funding	<u>\$38,300,000</u>
	\$40,000,000
NDIC	
Initial Funding	\$ 1,700,000
Final Funding	<u>\$ 8,300,000</u>
	\$10,000,000
 Total Cost	 \$50,000,000
Project Schedule - 30 Months	Project Deliverables
Contract Date – 9/22/06	Quarterly Reports:
Start of Progress Reporting – 2/1/07	4/30/07(✓); 7/30/07(✓)
Initial Decision Point – April 1, 2007	Special Report: 3/1/08
Amended – April 1, 2008	Final Report: 4/1/07(–)
Amended – December 21, 2008	12/31/08()
 Completion Date – 12/31/09	

OBJECTIVE / STATEMENT OF WORK: American Lignite Energy intends to expand the Falkirk Mine to supply lignite to the coal-to-liquid fuels plant which will utilize proven gasification and indirect liquefaction technologies to convert the lignite to a high quality, low emissions gasoline, generate electricity and produce other co-products. The partners anticipate that it will take \$50 million and up to 30 months to complete the front-end engineering and design (FEED) process to take the project to financial closure and to the point where final design, procurement and construction can begin.

STATUS

Through April 30, 2007

Three potential sites were evaluated for CTL plant; the Falkirk location was selected. Gasoline was chosen as the preferred end product. The following studies have been completed: plant configuration; coal and site assessment studies; site fatal flaw analysis; water supply assessment; carbon management plan; liquid fuel market; power market and transmission; and project financial analysis and sensitivities modeling.

May 1 – July 31, 2007

ALE committed to the following studies:

- a. Pre-Feed engineering study – a consultant for the study was selected.
- b. Preliminary process design package for the gasification island portion of the pre-FEED engineering study.
- c. Proposal and design package for the methanol-to-gasoline.
- d. Water supply study.
- e. Coal gasification test.
- f. Coal pulverizing and drying.

Falkirk Mining Company updated its mining plan to ensure the mine can provide coal to both the ALE project and the Coal Creek Station. The kick-off meeting for the pre-FEED study was on June 19-20.

August 1 – October 31, 2007

ALE has selected contractors to provide a preliminary process design package: for the acid gas removal and sulfur recovery portion of the pre-FEED study and the air separation unit. Preliminary process design packages have been received for the dryer, gasification island, methanol synthesis, methanol-to-gasoline units and gas turbines. A lignite sample has been sent to a test facility. An update of the methanol-to gasoline market is underway and water supply assessments continue.

November 1, 2007 – July 14, 2008

Siemens completed a coal gasification test in Germany and a final report has been submitted. Aker Kvaerner conducted and completed the Pre-Feed Engineering Study. ALE received preliminary process design packages from all of the technology vendors. AE2S completed the water assessment study. Headwaters completed four techno-economic case studies to evaluate various sized plants and other products. Purvin & Gertz submitted a final report for gasoline and LPG regional market study. ALE received feedback from banking institutions. ALE requested, and the NDIC approved, deferring its initial decision point from April 1 to December 31, 2008.